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**Kokish et al.**

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(54) **ACTIVE DRIVE MECHANISM WITH FINITE RANGE OF MOTION**

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(57) **ABSTRACT**

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See application file for complete search history.

Various exemplary drive apparatuses and associated methods are disclosed for driving an elongated member, e.g., a catheter, sheath, or guidewire. An exemplary drive apparatus may include a first component and a moveable component, each configured to selectively grip the elongated member. In some examples, the first and moveable components may each include a gripping device. The moveable component may be configured to selectively move axially and rotationally with respect to a support surface to effect axial movement and rotation movement, respectively, of the elongated member with respect to the support surface within a range of motion of the moveable component. The moveable component may be configured to move the elongated member across a predetermined movement having a magnitude greater than the range of motion.

**18 Claims, 13 Drawing Sheets**

